The Amateur Radio COMMUNICATOR

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The Amateur Radio Communicator

The Amateur Radio Communicator is published monthly and is the official journal of The National Amateur Radio Association (NARA), 16541 Redmond Way, Suite 232, Redmond, WA 98052.

The National Amateur Radio Association is incorporated in the State of Washington and is an exempt organization as defined in Section 501(c)(3) of the Internal Revenue Service Code.

Organization Goals

The National Amateur Radio Association is a nonprofit organization. It consists of individuals interested in the art of radio communication. The broad goal of NARA is to make Amateur Radio more widely known and to encourage more people to become involved in the Amateur Radio Service.

The organization has four specific goals within this broad framework. These are to a) publicize Amateur Radio to the general public, b) attract young people to the Amateur Radio Service, c) help existing Amateurs achieve the greatest benefit from the Amateur Radio Service and d) make Amateurs aware that our radio frequencies are in jeopardy from commercial interests.

NARA advertises in various consumer publications to create a public awareness of the Amateur Radio Service and to encourage readers to write NARA for more information. The Association also solicits authors who write on the subject of Amateur Radio in these publications. NARA has committed itself to making Amateur Radio more interesting and more accessible to all concerned.

NARA is specifically interested in encouraging young people to join our fraternity. The organization works with educators to increase awareness of the Amateur Radio Service and its value as an interesting way of educating young people. A core of young people insures continued growth of the Amateur Radio Service.

NARA believes that existing Amateurs should be more aware of the radio communication theory. Each month an article will appear in *The Amateur Radio Communicator* which discusses a technical aspect of the Amateur Radio Service.

NARA is very concerned that confiscation of frequencies assigned to the Amateur Radio Service will continue. These frequencies are a precious resource. On the other hand, there are an inadequate number of frequencies to accommodate all the new communication requirements. Amateurs must create an environment where it is more beneficial to the public to have Amateur Radio operators on these frequencies than new and emerging commercial services.

Membership and Subscriptions

Those joining NARA receive a subscription to *The Amateur Radio Communicator* for a period of one year. The combined cost of membership and magazine is $10.00 per year in all areas with a U.S. ZIP code. The cost is $16.00 per year in Canada and $20.00 year elsewhere.

The NARA membership and subscription to *The Amateur Radio Communicator* cannot be separated. Since NARA is a nonprofit corporation, the membership cost may be tax deductible. Verify this with your accountant.

It is not necessary to hold an Amateur Radio license to become a member of The National Amateur Radio Association. The only "qualification" is an interest in radio communications.

Editorial Policy

Each article and column which appears in *The Amateur Radio Communicator* is evaluated by the Editorial Board to meet a single criteria: how it contributes to NARA's educational objectives. Editorial material is intended to either (1) interest new people in becoming a Radio Amateur, (2) help existing Radio Amateurs get more out of their hobby through better understanding, (3) explain the theory behind some aspect of the service or (4) educate Amateurs on how to retain our valuable spectrum.

How To Contact NARA

The editors of *The Amateur Radio Communicator* and officers of the National Amateur Radio Association want to hear from you. Please send your questions, comments or submissions to The National Amateur Radio Association, 16541 Redmond Way, Suite 232, Redmond WA 98052, or by calling (206) 232-2579. For those inclined to use electronic mail, you can reach us at our MCI Mailbox (NARANET1 or 365-8035) or on CompuServe (70371,111).

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In My Opinion...

EDITORIAL
Don Stoner, W6TNS

This may be your first exposure to *The Amateur Radio Communicator* and The National Amateur Radio Association. I certainly hope it won't be your last. In my first editorial, I'd like to tell you about NARA, our plans for the future and what you can expect to see in this journal.

WHERE DID NARA COME FROM?

In November of 1988, the Federal Communications Commission slipped a bomb into our hamshacks and lit the fuse. The FCC announced they were reallocating a portion of the 220-MHz band to a new communications service based on a petition submitted by United Parcel Service. Our national organization, The American Radio Relay League has tried to snuff out the fuse and get the decision reversed. But as far as I can tell, the 220–222 MHz part of the band is a goner!

How could this have happened? Well, for starters, we took the Amateur Radio Service and our fraternity for granted. It never occurred to us that the FCC might give some of "our" frequencies away just because we didn't use them.

The FCC even warned us of their intention. In 1984 Robert Foosaner was Chief of the FCC Private Radio Bureau. He indicated in a *CQ* magazine interview that the band was not being used adequately. Mr. Foosaner flatly stated it might be assigned to other services. Unfortunately we didn't believe him.

I have a theory that the FCC confiscated these frequencies to send Amateurs a message. I believe the message is "shape up or ship out." Warm up the tar and start collecting feathers if you like, but in my opinion, the Commission did Amateurs an enormous favor. A two-MHz slice of radio frequency spectrum is a small price to pay for awakening us from our long sleep.

The Amateur Radio Service is coming back to life after 20 or more years of being totally oblivious to the changes taking place all around us. Amateurs are starting to ask how they can contribute to the fraternity. They want to improve themselves and they want to see the service revitalized. They want more young people to enjoy Amateur Radio. Teachers, particularly those who are Amateurs, are beginning to realize how the service can be used to educate our youngsters in a number of disciplines.

This metamorphosis also happened to your humble editor in November of 1988. I've enjoyed Amateur Radio for almost 40 years. In the 50's and 60's I wrote a number of books and articles for Amateurs. I have also taken the Amateur Radio Service for granted. I'm as guilty as anyone. But that stopped when we lost part of the 220-MHz band. The National Amateur Radio Association became more than just a gleam in my eye.

WHAT ARE THE GOALS OF NARA?

Broadly speaking, the goal of The National Amateur Radio Association is the promotion of ham radio. The organization has four specific goals within this broad framework. These are to (a) publicize or market Amateur Radio to the general public, (b) attract young people to the Amateur Radio Service, (c) help existing Amateurs achieve the greatest benefit from the Amateur Radio Service and (d) make Amateurs aware that our radio frequencies are in jeopardy from commercial interests. Here are some of my specific thoughts on these four areas.

MARKETING AMATEUR RADIO TO THE PUBLIC

Many people don't understand the significance of marketing and sales. That difference is very germane to this discussion.

Let's say you go into a ham radio store and tell the person behind the counter you want to buy an ICOM IC-781. He or she takes your order along with your money and hands you a radio. In this instance the person is simply an order taker and not even a sales person. A sales person tries to convince you to buy a specific product but they are not marketeers. The people who publish the brochures, run the advertisements and create your desire to own the IC-781 are the marketeers. Marketing *creates the desire* to have something.

For as long as I can remember, we hams have been order takers. We have not been salespersons and by no stretch of the imagination could we be called marketeers of ham radio. If someone expressed their desire to be a ham, or an ex-CBer convinced us they were a born-again communicator, we'd "take their order" and accept them into our ranks. Until recently, we never tried to be salespersons or marketeers for our hobby.

Deep down inside the human brain, is a little grey glob that scientists label the "I've got mine" lobe. In this area of the Amateur's brain is stored the feeling that we really don't want any more hams than we already have. We'll never admit it, even to ourselves, but the feeling is there. More hams equal more QRM, more problems with the FCC and more drift away from the way things used to be in the "good ol' days."

More is not always better. More people with an Amateur Radio license may not have a positive or beneficial effect on the Amateur Service. We must mold and shape these people in the traditions that have guided us since the early part of the century. How we accomplish this will be the subject of articles in future issues of this journal.

ATTRACTING YOUNG PEOPLE

When I was a kid, ham radio was a young peoples hobby. My best friend was a guy named Barry Windsor. Barry and I were fascinated by ham radio. We used to go over to Sid Dunn's house every Saturday morning. I never saw Sid without a cigar in his mouth. It was just another one of his appendages. When the end of his "stoggie" would get all goopy and slobbery, he'd line it up on the edge of the workbench, along with the other stubs, to dry out.

Anyway, Sid used to take time each week to teach us about ham radio. He'd work somebody in Upper Slobovia on 20 meters and our eyes would stand out on six-inch stems. Then Sid would tell us the reason he could do this was (insert lecture here) his three-element beam and how it worked, or the 304TL amplifier and how it worked, or radio propagation and how it worked. You get the idea.

Barry and I and some of the other kids pecked away at keys rather unsuccessfully trying to learn the Morse code. I lost track of the others but finally made the grade when the FCC, in their infinite wisdom, created the Novice and Technician license.

Somehow, someway, we must resurrect the magic aura that existed back in Sid's hamshack. Essentially, we must try to give something back to our fraternity in exchange for all the wonderful things it has given us.

It's not going to be easy! Today kids have computers, Nintendo games, cars, the opposite sex and Madonna, MTV and a million other distractions. We've taken the first step to redress the problem of attracting young people by creating a new "code-free" license. What this license becomes, and whether it is successful in attracting newcomers is entirely up to us. If we don't tell anyone about the Amateur Radio Service and how easy it is to become a ham, the new Technician Class license will be a "dud." In short, we must all make an effort to **market** ham radio to the public.

In marketing, you commonly give away a sample which gets the "hook in and set," to use a fishing metaphor. That's what the new Technician license can do that for our fraternity. It can be the "hook" that we use to attract people to Amateur Radio.

But we must get out and hustle the service to young people. That's where NARA comes in. We intend to tell our members how to recruit youngsters. We intend to print stories about how others have done it successfully.

We believe the place to recruit youngsters is in the schools and as early as possible. Again, we are going to have a lot to say about our schools in future issues of *The Amateur Radio Communicator*.

HELPING EXISTING HAMS

Like it or not, a lot of hams passed their written test simply by memorizing the questions and the correct answer. Why not? What's wrong with that? You memorize the code don't you?

But these hams are not particularly proud of the fact they don't understand the answers or even the questions. They are curious about the technical aspects of the Amateur Radio Service.

I have yet to meet a ham that does not want to improve him or herself. Some Volunteer Examiners have established classes to teach people how to become a ham. Who has a class to teach you how to upgrade from Novice/Technician to General? Very few, I suspect.

Each issue of *The Amateur Radio Communicator* will have a theory article. Hopefully they will be as useful and interesting to existing hams as well as to newcomers. If you have specific questions that you would like to see answered in this publication, send them to "Editor—A Touch Of Class."

PRESERVATION OF "OUR" FREQUENCIES

I put the word "our" in quotes. We seem to think of the radio spectrum as "ours." A number of bands of frequencies are *loaned* for our use, by the Federal Communications Commission. We can continue to use them so long as it is in the national interest to do so. Make no mistake about it fellow hams. The FCC did not let us use parts of the radio spectrum because they think we are nice guys or gals. They do so because it is more in the national interest to loan these frequencies to the Amateur Radio Service than to someone else. If that equation changes, more frequencies will be lost to other activities which are perceived by the FCC to better advance the national interest.

In November 1988, the FCC brought the point forcibly to our attention. They reminded us, once again, "If you don't use 'em, you're gonna lose 'em!" Some of our bands are barren waste-lands that we Amateurs seem to be saving for a "rainy day." Six meters is under utilized except for a few hardy souls in Southern California. The Commission knew the 220-MHz band was not adequately occupied. It won't be adequately occupied even when the FCC allocates the 220–222 MHz portion for land mobile use. We have already lost the 902-MHz band and the fate of our satellite "S" band will be decided next year in Spain by the World Administrative Radio Conference (WARC).

The 1926-MHz band is priceless. Do you know of anyone who operates this band? Does you ham store have any 1926-MHz equipment in stock or do they have to order it? Is there a 1296-MHz repeater in your town? I doubt it.

If we maintain our "business as usual" approach, we are going to lose more frequencies. A lot more!

NARA hopes to create an environment where confiscation of frequencies used by Amateurs would be unthinkable both politically and economically. But NARA cannot do it without your help and support.

WHAT CAN YOU DO?

I'd love to think that one Amateur can single handedly correct all the ills of the past few decades. My ego would get a tremendous boost to see bureaucrats quake at the sight of a NARA letterhead.

The reality is that nothing is going to happen without your support. No one person can make the necessary changes. Even a group like NARA cannot do it without your help. Only you can make the Amateur Radio Service above reproach andcriticism.You must become concerned about the growth of our fraternity and the education of our youth. You must do something about the status of radio spectrum used by Amateurs. You can show your support by joining the National Amateur Radio Association. If you sit down this evening and wrap a membership application around your check for $10.00 it *will* make a difference.

Hopefully, I have been able to demonstrate the application of "Marketing 101" in this editorial. Have I been able to create a desire to join a young and aggressive organization that is concerned about our fraternity? Your graduation test will be found on the back of this journal in the form of a membership application blank.

73, de Don, W6TNS

Letters

■ Thanks For Your Efforts

Thank you very much for your efforts. I have had a rough time to Hamdom! One aspect that should be addressed is cost of equipment. Most young hams would buy used if they could do so.
Gerald Taylor, KC4ARB

You are quite right, Gerald. I'd like to see Amateur Radio stores expand their used equipment department. There will always be a good market for used gear.—Ed.

■ No No Code

No code is not the answer. It hasn't stopped any youngster—they are too resilient and can do anything they want to tackle. The whole concept has been fostered by a bunch of whiners. I include the NARA!
Stan Stolz, KJ6WM

Phew! Pretty strong words, Stan. You better not let any of those Orange County conservatives catch you calling Barry Goldwater, K7UGA, a whiner!!!—Ed.

■ Looking For An Elmer

Since my mid teens I've been interested in radio communications, Amateur Radio and the like, but never really knew how to get started. I read magazines like 73 and CQ but those are very technical and not very helpful to an absolute neophyte as myself.

Can you recommend someone in my area whom can show me around the ham radio field? From all that I know, I "think" that I'd like to get involved—but I know not where to start.

What I would like, ideally, is to meet someone who could show me how, and why and when. Someone who is knowledgeable, patient and enthusiastic. Someone whom could mentor me through the early times.

I read in the magazines how the Ham field is always looking for new members—so here I am! Feel free to share my E-Mail addresses or home address and phone with any prospective Hams that might like to assist me.

I compute with my Macintosh (most favored) my MS-DOS (less favored) or my dusty C-64 (least favored) and am interested in utilizing my computers in communications as well.

Thanks in advance,
Bill Brookings
One Thayer Road, D-6
West Point, New York 10996
(914) 446-5803
CIS 72560,3426
GEnie STORM.KING

Bill, your letter is typical of those we receive here at the offices of The National Amateur Radio Association. You also seem to be the "prototype" of those we are looking for to introduce to the Amateur Radio Service. Under separate cover, I've sent you a list of "Helping Hams" located near you. Anyone else care to help?—Ed.

■ Thanks For The Equipment

(During 1990, The National Amateur Radio Association, in conjunction with Uniden Corporation of American, offered ham rigs to schools who would use them to stimulate student interest in ham radio. Almost 500 inquiries were received and NARA was able to place more than 100 Uniden Model 2510 10-meter transceivers in schools throughout the country. Our thanks to Paul Davis, Executive VP of Uniden who made this program possible. The following is a sample of letters received—Ed.)

On behalf of the Mission Bay High School Amateur Radio Club, I would like to thank you for the donation of a HR-2510 transceiver. We are in the process of acquiring a power supply and antenna and look forward to many years of enjoyment of this equipment. We hope to check in on the "CQ All Schools" net as well as pursue a "Worked All States" certificate.

Thanks again,
Stuart L. Noderer, KC6GZU
Club Sponsor
San Diego, CA

LaVille High School is very grateful to have been chosen to participate in the "CQ All Schools" equipment load program. The Uniden HR-2510 10- meter transceiver is being used in our electronics and communications class. The school newspaper has already begun writing an article about our new Amateur Radio program in the electronics class. I am sure this will develop increased interest in electronics and Amateur Radio at LaVille. I am particularly excited since I recently received a General Class license.

Sincerely,
Tom Conrad, N9JEU
Electronics Teacher
Lakeville, IN

We received the Uniden 2510 transceiver at Iroquois Central School just before our Thanksgiving recess. What a pleasant surprise! In less than one week of operations, our classes have contacted five countries and many stateside hams. These demonstrations included one sixth grade class (12 students), three 7th grade classes and a small group of six Cub Scouts. A good start in creating some life long impressions. On behalf of some very excited young people and the Iroquois School, thank you for your generous contribution.

Very truly yours,
Ralph Chaney, K2ZUW
Elma, NY

Send your questions or comments to: Editor, The Amateur Radio Communicator, 16541 Redmond Way, Suite 232, Redmond, WA 98052 or via E-Mail—MCI ID:NARANET1, CompuServe 70371,111.

Ham Radio Outlook

Fred Maia, W5YI
National Volunteer Examiner Coordinator
P.O. Box 565191
Dallas, TX 75356

FCC Establishes New Codeless Class of Amateur Operators

Not many of you are aware of a Petition for Rulemaking we filed with the FCC on July 7, 1977, seeking to add a sixth (Hobbyist) voice class of amateur radio operator license. It was to be established specifically between 220 and 222 MHz without a Morse code requirement. We reasoned that it would serve as a stepping stone to amateur radio—and would also allow communication between amateurs and their families.

The petition was filed before the 1979 general World Administrative Radio Conference during the hey day of CB radio. The Federal Communications Commission apparently thought it had some merit because they accepted it for public comment and assigned a Rule Making file number (RM-2626) number to it.

The Hobbyist Class would use type-accepted FM crystal controlled push-button operated transceivers. Eligibility included being informally instructed and passing a simple ham volunteer administered examination on operation of a 220-MHz transceiver and amateur procedures/courtesy. The petition was drafted by Gus Howard, W5KM, an ex-FCC (Dallas) Engineer-in-Charge. It met with mixed reaction, finally being denied and dismissed some four years later for lack of support.

The 220–225 MHz band was never really an exclusive ham band.

It was three-way shared spectrum—but since the other services never used it, the amateurs had private use. We may have called it ours, but it never was. The Notice of Proposed Rulemaking (dated Nov. 18, 1982) drafted to implement the 1979 WARC accord clearly carried an threatening signal. It said the 220–225 MHz band was being studied for possible reallocation, but no changes would be made pending further rule making.

In 1987 the FCC began the rule making and a year later permanently divided the band between business and amateur usage. The top three megahertz, 222–225 MHz became the exclusive domain of the amateur—with 220–222 going to Land Mobile commercial interests. I believe we would still have 220–222 MHz had the amateur community supported our Hobbyist Class.

In any event, the reallocation certainly got the attention of the amateur fraternity! Our spectrum is the most valuable asset we have. It is worth billions! No one "owns" the spectrum. We are only granted its use. And there is always a way the "lease" can be revised if the situation warrants. The words "exclusive" and "permanent" are subject to change. All of a sudden, hams started becoming more receptive to perhaps broadening the base of ham radio operators. More than a dozen petitions were filed proposing relaxed entry requirements—including one from the American Radio Relay League.

I bring this all up to illustrate a very important point. The radio spectrum is a limited, measurable resource in much the same fashion as oil and land. There is only so much and like oil and land, it is in big demand. The FCC must operate in the public interest and apportion spectrum out to who will use it the most effectively. The amateur community has an ill-advised history of protecting their spectrum against widespread use. In the case of 220–222 MHz, it worked to our detriment. We need to generate more activity if we are going to keep all the valuable spectrum we have.

FCC ADOPTS NO-CODE HAM TICKET

So it is with much elation and anticipation that I report the Commission has voted to allow access to the very desirable VHF/UHF amateur spectrum above 30 MHz without first learning the Morse code. It should help increase our numbers significantly! They did this by simply dropping the Morse code requirement from the Technician Class operator license. Applicants could begin qualifying for codeless Technician class licenses as early as mid-February 1991.

The Amateur Service currently consists of five classes of licenses having increasing privileges and each being progressively more difficult to obtain. The classes are Novice, Technician, General, Advanced and Extra. The FCC initially proposed to call their proposed codefree level, the "Communicator" class, but decided against it. They found they already had the machinery in place for "no-code" by dropping the code requirement from the Technician class. There is no impact whatsoever on any Amateur class except the Technician level.

The FCC noted that offering a codeless class of license that authorizes control operator privileges at stations which transmit exclusively above 30 MHz provides an entry level opportunity to otherwise qualified persons who find telegraphy a barrier to pursuing the purposes of the Amateur Service. Therefore, the FCC has established the Technician Class as the codeless entry class of license.

This license includes all Amateur privileges above 30 MHz at full Amateur power—including the six and two-meter bands. Group "C" (1-by-3 format, i.e. W6TNS) call signs where still available, otherwise 2-by-3 format (i.e. KB7NQL) will be issued. The Commission also revised the rules to grandfather frequency privileges below 30 MHz to current Technician Class licensees. "Grandfathering" is a legal process by which licensees may continue previously obtained privileges even though they may exceed those of a new class.

The testing requirements for the codefree Technician are two examination elements; the current 30 question Element 2 and Element 3(A), 25 questions. A total of 55 questions in all. The two examinations need not be passed at the same time. No new examination questions are being required to be added to the Element 2 and 3(A) question pools although some revisions of existing questions may be necessary by the VEC's

Question Pool Committee. (Your author is Vice Chairman of the QPC.) There are approximately 700 possible questions in the combined pools.

In addition, the Commission decided to retain the Novice Class operator license in order to provide an alternate entry level operator license opportunity to persons who desire to enter ham radio and who can pass a telegraphy requirement in place of the more comprehensive written examination requirement for the codeless Technician Class operator license. There will continue to be no testing fees associated with the Novice level—even if the examination is administered at a three examiner test session conducted under the VEC System.

An enhanced Technician operator class informally called "Technician Plus," for Technician plus code, will be available when a code-free Technician passes Element 1(A), the five word-per-minute telegraphy requirement. "Tech Plus" privileges are also available when Novice level licensees successfully complete Element 3(A), the Technician written examination, at a VEC test session. Novices will not have their five word-per-minute code proficiency retested at a VEC session.

Technicians accorded high frequency (HF) privileges are not being required to append their call signs with a special identifier (such as /AC) as the Commission previously suggested in their Notice of Proposed Rulemaking. Tech Plus privileges include the high frequency (HF) band segments previously available to the Technician Class operator. They may only be vested by a three examiner team accredited by a Volunteer-Examiner Coordinator. This requires either Element 1(A) or 3(A) to be administered under the VEC System.

The two examiner Novice testing program will not be brought under the VEC System at this time—a feature that most of the amateur community supported. This is probably because Barry Goldwater, K7UGA, wanted the no cost Novice testing program to continue when he introduced legislation in 1987 that led to test fees (actually expense reimbursement) at the Technician class and higher. His wishes are part of the Congressional Record. The W5YI and ARRL-VEC, which account for 80% of all Amateur testing above the Novice level will be charging applicants $5.25 to coordinate VEC examinations effective January 1, 1991.

The FCC will not issue a new license nor update its licensee database when a Novice or the new no-code Tech operator upgrades to Technician Plus privileges. The license will only indicate "Technician." HF privileges presently accorded to the Technician Class will be vested by the Certificate of Successful Completion of Examination (CSCE) issued by the three examiner VE team.

Volunteer Examiner Coordinators are being asked to advise the FCC of all applicants who qualify for the new Technician Plus privileges. License upgrade may be accomplished in any of three ways; (1) by passing the 5 word-per-minute code test, Element 2 and 3(A) at the same time, (2) by passing 5 word-per-minute after first becoming a codeless Technician, or (3) when a Novice upgrades by completing Element 3(A).

A central database under VEC auspices will be established which will be made periodically available to the FCC for rule compliance purposes. This Tech Plus database will be either in magnetic or paper form. The FCC did say they may, at some point, update their Amateur operator license issuing software to indicate that a Technician has upgraded to HF privileges below 30 MHz.

Planning on taking a ham test? It's fun when you do it on your PC! And inexpensive. You can obtain everything you need for all classes, Novice through Extra, in the "Ham Radio Education Package." You review questions by license class or subelement. The software prints out actual tests so you can practice taking written exams right on your computer. Five IBM 5.25" disks are supplied and the set includes "Morse Academy," one of the best code teaching disks available. For more information, call (at no cost) to 1-800-669-W5YI.

73 for this month,
Fred, W5YI

Young Hams On The Move

Céline, KB7LOY, (left) who is from Bruz, France, passed her Novice exam during her short visit to Seattle last summer. Her father, Jacky Calvo, F2CW, was one of the French team members who participated in the World Radiosport Team Championship, one of the activities of the 1990 Goodwill Games.

Dan, N7NYQ, (right) went from a non-ham to passing his General exam in only six months. He's now working on earning his Extra Class ticket.

Don Stoner, W6TNS

Amateur Radio KING OF HOBBIES

To their non-Amateur friends, "hams" are slightly eccentric characters who live in a little world all their own. To their spouse, a ham is the "lunkhead" who gets solder on the carpet and is responsible for enormous electric bills. Neighbors sometimes consider them members of a vast organization dedicated to the violent overthrow of television. All will agree that hams seem to speak in a foreign tongue. But to their fellow hams, an Amateur is simply a person with the most interesting, unusual and rewarding hobby in the world.

Amateurs *are* special. They participate in the only hobby, called the Amateur Service, which is regulated by the federal government. Amateurs are given free access to radio frequencies which are worth literally billions of dollars to commercial interests.

Beyond question, the world of ham radio provides a thrill and excitement like no other leasure time activity. The only question is do you have the desire and persistence to earn the right to be called a radio Amateur?

SOMETHING FOR EVERYONE

Ham radio is actually a large group of sub-hobbies within a single hobby, all tied together by electromagnetic waves. It can be an escape from the humdrum of everyday life which allows you to talk with other hams all over the world. Amateurs are encouraged to experiment with their equipment and develop new techniques.

Amateurs have many methods of communication. Most use a microphone since it is the fastest way to convey your thoughts and comments to someone else. Many hams do their "talking" with computers. A few hardy souls even have their own TV stations. Some prefer to use Morse, claiming it is more relaxing, reliable and the equipment is less expensive.

In all, there are more facets to the hobby than there are on the British Crown jewels! Did you know that Amateurs have their own satellites which support communication all over the world? We can even talk by Amateur radio to astronauts (both American and Russian) circling the earth in their space ships. The fastest growing segment of our hobby is the digital group. Through a scheme called packet, you can communicate with tens-of-thousands of other computer buffs.

WHO DOES IT?

Amateurs can be found in all walks of life. Well known political figures, such as Barry Goldwater (K7UGA) and His Majesty King Hussain of Jordan (JY1) are both Amateurs. Dick Rutan (KB7LQS) had an Amateur station aboard "Voyager" when he and Jenna Yaeger made their famous flight around the world.

Country western fans know the names of picker Chet Atkins and singer Ronnie Milsap (WA4CZD and WB4KCG respectively). Other famous hams include rock guitarist Joe Walsh. Donnie Osmond used to be KA7EVD and Marlon Brando is still FO0GJ (Tahiti). Some of the older readers will remember entertainers Andy Devine and Arthur Godfrey (K4LIB) as well as musicians Pee Wee Hunt and Alvino Rey (W6UK).

WHAT DO HAMS TALK ABOUT?

Let's look at a few activities that occupy the time of more than 450,000 Americans. Chatting, or "rag-chewing," is the most popular diversion. All hams love to talk! As soon as his feet hit the floor, Sam Ham will flick on his receiver and transmitter, even before turning on the coffee pot. Around the nation, other hams are doing the same thing. More often than not, a group of these "early birds" collect in a "round-table." A microphone is passed around via the air waves until it is time for various members to dash off to work. The scene is repeated after supper by some of the more avid members of the clan.

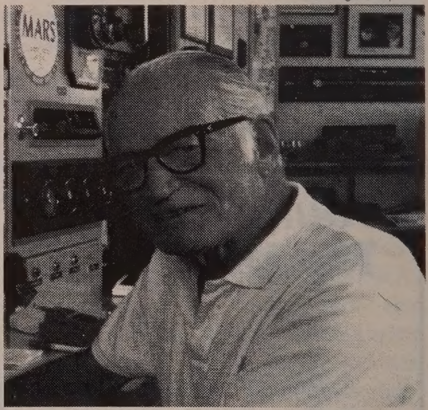
"What do you find to talk about?" hams are often asked. Sex, religion, and politics used to be avoided but open discussion is quite commonplace these days. Generally, the conversation is less likely to be on technical things than on taking care of the house, car problems and critiquing the latest Steven Spielberg movie.

Notable Amateurs

NASA Photo

Ron Parise, WA4SIR, was one of the astronauts aboard the STS-35 shuttle mission.

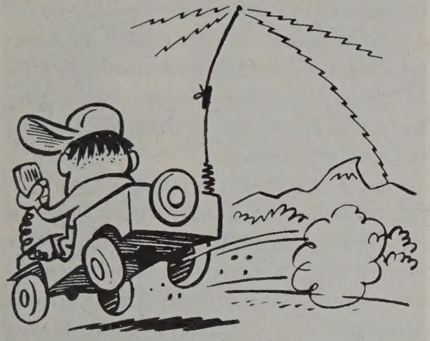
CQ Magazine photo



Barry Goldwater, K7UGA, is the elder statesman of ham radio. He was a U.S. Senator for many years.

HAMMING ON THE HIGHWAY

Sam Ham might also be interested in another phase of the hobby called mobile operation. If so, he probably has a miniway to the office, he can once again participate in the "round-table" from his rolling radio station. Or, should Sam elect to, he can switch the frequency of his equipment and join in the conversation with a similar group of hams clear across the country.



PUBLIC SERVICE

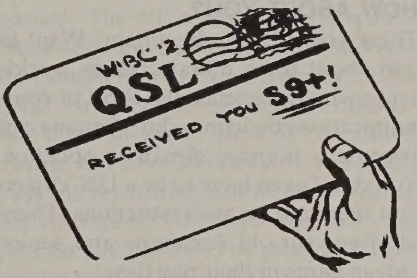
Before you get the idea that Amateurs are just a bunch of chattering magpies, remember that it's called the Amateur Radio Service. The original intent was public service and the handling of messages. The majority of Amateurs carry on in the same tradition. Amateurs provide public service without pecuniary interest (compensation).

Ham radio is also a communication service for self-training and technical experimentation. We are allowed access to priceless radio spectrum on the assumption that Amateurs form a valued pool of skilled communicators in times of emergency. It is absolutely essential that we maintain this tradition if we are to retain our frequency allocations throughout the communications spectrum.

THE THRILL OF DXING

The term means communicating long distance by radio. The DX-minded ham is an unusual variation of the typical Amateur. Like Sam Ham, our inveterate DXer rises before dawn. He turns on the station and starts the coffee brewing almost at the same time. However, DX Dan does not jump into a round-table. Instead, he squashes a pair of headphones on his ears and intently tunes the receiver dial to and fro. Several days may come and go without so much as a peep out of DX Dan's powerful transmitter. Then one morning Dan flushes his quarry and a look of grim determination settles across his face. He is listening to the faint rolling dots and dashes of 9N1MM, Father Moran, operating from Katmandu, Nepal! Suddenly, as 9N1MM stands by, Dan's powerful "rig" springs to life and the needles on the transmitter measuring instruments swing to and fro. Less than one minute later, Dan pushes the telegraph key away and writes down this new contact in his log book.

Most amazing, perhaps, is that DX Dan probably heard many other rare and exotic stations while searching the band for 9N1MM. On a typical morning he may have heard most of the districts of the Soviet Union, Sarawak, Brunei, Mauritius, The Orkney Islands, Qatar, Trucial Oman, and of course the more common countries such as England, Japan, Australia, or New Zealand. But Dan ignored their CQ ("I'm looking for a contact") calls in favor of the more elusive Nepal Amateur. He had contacted these other stations long ago. As our inveterate DXer prepared to dash off to work, he checked off the new conquest. Nepal was number 261 on his list of the more than 300 countries in the world.



To quote Dave Bell, W6AQ (who appeared in the video "The New World of Amateur Radio"), "When you turn on your radio and get on the air, it's like going fishing. You never know exactly what you are going to catch. That's the thrill of DX."

HAM RADIO "WALL PAPER"

In addition to the thrill of having "hooked" a new one, Dan will get a material reward also. Hams exchange postcards, called QSL's, which confirm their contacts. Each card carries details such as the date and time of contact, mode of transmission (voice or code), and a signal strength report. Thus, sometime after his contact, Dan will receive a card that he can proudly display on the wall of his ham station.

There's plenty of wall paper in this Amateurs "hamshack."

AMBASSADORS OF GOOD WILL

An interesting variation of the DX-minded ham is Ambassador Al. Al "gets his kicks" by conversing with overseas Amateurs, mostly to gain friends and exchange ideas. Although he may never meet one of these hams, he is truly an ambassador of international goodwill. These electronic ambassadors can tell you what the temperature was yesterday in Kuala Lumpur, Malasia, or who is winning the tennis matches in Melbourne, Australia. Al has two or three favorites overseas and maintains weekly contact schedules with them. Often they exchange inexpensive gifts, and once in a while they have the opportunity of meeting each other.

Young people make excellent "ambassadors of the air waves" for the United States. By communicating with youth in other countries, they help dispel the myth of the "ugly American."

RADIO REPEATERS

Have you ever tried to communicate with someone using Citizens Band equipment? Not very effective is it? Ham radio has a couple of features not available to CB'ers. The first is Amateur Radio use of FM (frequency modulation) equipment. The reception is crystal clear and you only hear one station at a time. Another aspect of FM communications is the use of repeaters. These devices consist of a receiver and retransmitter. Neither FM or repeaters are allowed on the Citizens Band.

Repeaters are usually installed on mountain tops or on the roof of a tall building. The repeater picks up the signals from an Amateur's hand-held or mobile two-way radio and resends (or repeats) it on another frequency for as much as 100 miles distant, and with perfect clarity.

There are more than 12,000 Amateur repeaters on the air in North America. You can drive from coast-to-coast and border-to-border and never be out of range of an Amateur repeater. In an emergency you can always contact someone for help with a two-way radio so tiny

ICOM photo

This little ICOM handheld can communicate for 100 miles or more via a repeater.

it will fit in your pocket or purse.

Repeaters are great for talking to friends in distant cities. For example, you can be driving around downtown Los Angeles and talk to another station motoring in San Diego. Repeaters also permit communication beyond mountains (which would normally shield or block the signals).

Some repeaters even have a telephone access so you can call your XYL and make up stories about why you'll be late for dinner. Best of all, you don't need to pay money to the local cellular telephone system.

WHAT'S AN XYL?

For convenience, I have used the male gender in describing the various types of Amateurs. However men certainly don't have a monopoly on the hobby. Female Amateurs are referred to as YL's or "young ladies." An XYL (not ex-YL) is a married young lady. There is no accurate tabulation, but approximately one out of every thirty hams is female.

Think it's too difficult? Probably the first woman ham was Miss Cecil Powell, secretary to the co-founder of the American Radio Relay League, Hiram Percy Maxim. In 1915, she constructed her own station, learned the code, and became an active Amateur.

What do YL's talk about? Well, what do women talk about whenever they get together? There are DXers, public-service spark plugs and "ambassadresses" among the skirt and sweater brigade too.

WELCOME CBERS!

Since it began, ham radio has grown at a steady pace with more newcomers arriving each year than there were "silent keys." Then, in the 60's, the ham population began to taper off and actually decline. This was due to interest in the Citizens Band. On CB, one could talk to people without studying for a license. Why get a ham "ticket?" This and the problems caused by CBers resulted in a lot of resentment on the part of Amateurs.

The problems of CB and the attraction of ham radio has brought many new members into our hobby. Today, probably 20 percent of the existing Amateurs are ex-CBers. Amateurs embrace CB "born again" communicators and encourage them to get a ham license.

HOW ABOUT YOU?

Think you'd like to be a ham? Want to join about three million others worldwide who experience the thrill of communications by ham radio? Anyone can become a licensed Amateur operator. You don't even have to be a U.S. citizen and there are no age restrictions. There are five year old Amateurs and senior citizen hams in their nineties.

It's really easy, and getting easier every day, to open that first door to the Amateur Service. You have to pass a simple test but you don't need to be examined at an office of the Federal Communications Commission (FCC). Since 1984, the government has been completely out of the ham testing business. Volunteer Examiners (VE's), holding senior Amateur licenses, now handle this function.

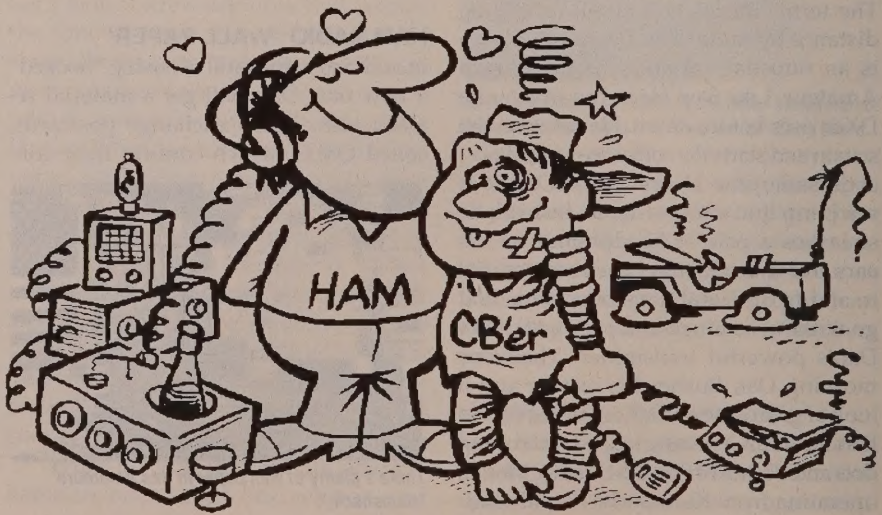
THE NEW TECHNICIAN CLASS

What do I mean by "really easy and getting easier?" Until recently, the regulations required that you be able to receive the Morse code to obtain an Amateur license. Actually communication by Morse is quite enjoyable and challanging but it was perceived by the public to be a difficult obstacle.

As a result of this perception, the FCC recently created a new entry level of Amateur license. The recipient of this license does not need to show a proficiency using Morse code. The license is called the new Technician class. It was created by dropping the five word-per-minute Morse code test from the existing Technician Class license.

All prospective hams are tested by a VE (Volunteer Examiner) team. VE's examine entry-level applicants under two different testing programs. These programs are the Novice examination program and the VEC (for Volunteer Examiner Coordinator) System. Up until recently there was only one entry level Amateur licence, the Novice. Now there are two: Novice and the new Technician. Novices are examined by a team of two amateurs holding General Class and higher level operator licenses. It takes three Volunteer Examiners under the more formal VEC System and they must hold either an Advanced or an Extra Class Amateur license.

Most Amateur examinations are administered under the VEC System since VE's are systematically accredited and



Westlink photo

So you thought all hams were old geezers, eh? Surprize! Meet Erin McGinnis, KA0WTE, the 1989 Westlink Report "Young Person of the Year."

provided Amateur testing information and materials by a VEC. A VEC is an organization established to act as the testing liaison between the VE and the Federal Communications Commission who issue the Amateur operator license. VE's are always happy to have newcomers to ham radio appear at their testing sessions. The new no-code Technician class applicant must be examined under the VEC System and a small testing fee (currently $5.25) is charged to defray the cost of the examining program. There is no charge to be administered the Novice examination.

VEC's now take the place of the FCC in the testing function. They develop all examinations and testing guidelines and make them available to the Amateur testing community. It is the VEC who now manages the Amateur operator testing function for the government. Practically every city of 50,000 or more has monthly VEC examinations conducted by volunteers.

The new Technician license is really a "beginners permit." To earn it, and prove you are qualified to be an Amateur, you still have to pass a test. Volunteer Examiner Coordinators have developed a large pool of multiple choice questions that apply to the things beginning hams should know. All of the questions, even the exact word-for-word multiple choice answers are known to the public and widely published. Copies of these exams, with the correct answers, are available from NARA.

The new Technician question pool is a combination of the questions for the Novice Class license (called Element 2) and the questions from the previous Technician Class license (called Element 3A). The Volunteer Examiner simply administers 55 questions from the two pools according to a selection formula. This formula is stated by the government in the Part 97 Rules and Regulations for the Amateur Service. There are about 700 total questions in the Element 2 and 3(A) question pools from which the VE selects for your Technician examination. (Approximately 375 in Element 2 and 325 in Element 3(A).

Your VE team will select thirty questions from the Element 2 pool and 25 from Element 3(A). Passing Element 2 requires that you answer 22 questions correctly; Element 3(A) requires 19—a total of 41 correct. You need not pass both test elements at the same time. Instead you may take one element and the other later. If you fail one portion, you still receive credit for the test element passed. The VE team will give you a credit slip, called a Certificate of Successful Completion of Examination (CSCE), good towards the remaining examination element which must be completed during the next 365 days. If you don't pass the remaining test element during the next year, you lose credit for the portion you passed. The process is very similar to the written test given to obtain an automobile driving license. You study the rules, procedures, questions and then pass the test.

The first step in obtaining a Technician license, is to submit an application, called an FCC Form 610, to your Volunteer Examiners. The FCC Form 610, called the **Application for Amateur Station and Operator License**, consists of three sections. Section I is completed by the applicant. The Section II Certification and the Administering VE's Report is completed by your examiners. You can obtain a copy of the 610 form by calling your local FCC office (listed under U.S. Government) or by requesting one from The National Amateur Radio Association (NARA).

W5YI - VEC
HAM IT UP!
VOLUNTEER EXAMINING

After you pass the test, your application will be immediately forwarded by the VE team to the VEC who coordinated the testing session. (A copy of your credit certificate must be attached to your application if you claim credit from a previously passed examination element.) The VEC verifies everything is correct, then forwards the material to the FCC. The application is returned to you if you fail the test. It is important to obtain a photocopy of your successful application if you plan to upgrade to a higher class before your license arrives. The next VE team will require proof that you have already passed the examination before testing you further.

You can't go on-the-air until your license arrives. It takes about six weeks to two months to get your "diploma" from Uncle Sam. Then the fun begins.

The new Technician Class license allows you full Amateur priviledges on the very high frequency (VHF) and ultrahigh (UHF) bands including six meters and above. Most of the satellite and computer communication occurs on these bands.

Once you earn your Technician class license, don't stop there. The next step is the so-called "Technician Plus" (for Technician plus Morse code) level, followed by the General, Advanced and Extra Class. You no longer have the option of becoming a Novice class operator once you enter at the code-free Technician level. To advance to "Tech Plus" you must pass the Element 1(A) five words-per-minute telegraphy examination at a VEC System test session. You are not permitted to go back and take the five word-per-minute code exam under the two VE Novice examination program. While considered an ungrade, no new operator license will be issued by the FCC to the "Tech Plus" operator. Instead your new privileges will be vested by the Certificate of Successful Completion given you by the examining team when you pass the code.

"Tech Plus" operators additionally obtain segments of the Amateur 80, 40, 15 and 10-meter band. Most of these bands are for telegraphy but you are permitted voice transmission in a portion of the 10-meter band.

Continue to study and improve your knowledge. Remember, a Technician "ticket" is simply a key which opens the first door and allows you to enter a wondrous room with many more doors. There is no "free lunch" in this world. You get what you pay for whether the currency is sweat or dollars. The new Technician license is only the beginning, not the ultimate goal. Plan on learning the Morse code so you can access the other Amateur bands. You'll be glad you did!

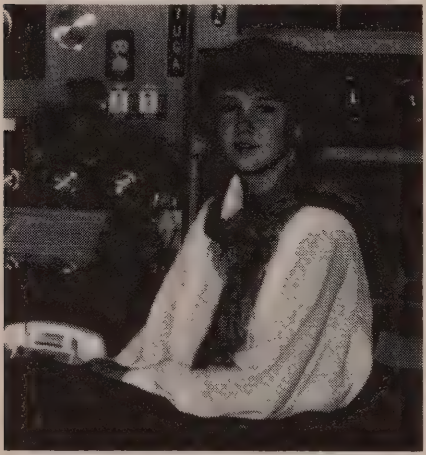
THE NOVICE CLASS

The Commission decided to retain the Novice Class operator license in order to provide an alternate entry level operator license opportunity to persons (especially youngsters), who can pass a telegraphy requirment in place of the more comprehensive written examination requirement for the codeless Technician Class operator license.

Novice privileges are not as desirable as those associated with the new code-free Technician. Novices obtain code spectrum on 80, 40, 15 and 10 meters and may operate in the voice mode on a segment of ten. In addition Novices obtain portions of the 222 MHz and 1270 MHz ham bands.

To become a Novice you must pass Element 2 (30 questions) and Element 1(A), the five word-per-minute Morse test. This examination may be administered by two General or higher class Amateur operators who need not be accredited by a VEC. It is also frequently conducted at VEC sessions if the applicant requests the Novice instead of the Technician examinations. The only difference is that the five WPM code will be administered instead of what some people perceive is the harder Element 3(A). You may be administered the five word-per-minute telegraphy test under the two VE Novice program only if you have never held the code-free Technician class operator license.

Westlink photo



Kelly Howard, N6PNY, is featured in the ARRL video called "The New World of Amateur Radio."

To engage in world-wide communications you need at least a Novice or Tech Plus class license. With either license you can communicate by voice on the 10-meter Amateur band and by Morse code on other bands. The 10-meter band is capable of continent spanning range at various times of the year. The bands where you are permitted to use Morse have long distance capabilities at all hours of the day and night.

Learning to receive the Morse code can best be done with a personal computer (using a program such as Super Morse, if you have an MS-DOS computer), listening to over-the-air code practice or with the audio training tapes available in the commercial marketplace. Morse code seems difficult, but in actual fact is quite easy. All it takes is a bit of practice. At examination time, you will be sent a minimum of five minutes of Morse at five words-per-minute.

You are specifically required to correctly answer 41 out of 55 written test questions extacted from two question pools to become a Technician. However, your examiners are allowed much more freedom to determine if you have passed the Morse code test. Their only guidelines are: (1) they must be convinced and certify that you can send and receive the International Morse code at five words-per-minute during a transmission of at least five minutes; and (2) the text transmitted must contain forty-three different characters. These are all the letters of the alphabet, all numerals 0–9, four punctuation marks (the period, comma, question mark, slant bar) and three operating procedure signs (AR, BT and SK). While not required, most telegraphy examinations take the form of an actual telegraphy communication, between two amateurs. You probably will not be administered a telegraphy hand-sending test since the FCC has taken the position that operators who can transcribe Morse code can also send it.

Some examiners will ask you to correctly copy 25 characters in a row (punctuation, numerals and prosigns count as two characters) to determine if you can copy the code. Others might ask you to answer seven out of ten questions about the transmitted text or fill in missing words from the copy. Even a multiple choice or true/false code examination is legal. The format of the telegraphy test is left to the discretion of the VE.

HELPING HAMS

In virtually every area of the country there are "Helping Hams" who want to assist you in joining our hobby. To paraphrase the Beatles, if you could "use a little help from your friends," let us know at The National Amateur Radio Association. Give us your ZIP code and we will tell you how to contact one or more "Helping Hams" who live near you. NARA also has a data base of information on Volunteer Examiners. These VE's can advise you of local ham radio classes and, when the time comes, provide your Amateur test. NARA will also help you locate Amateur clubs and other organizations which are interested in guiding you to become a ham radio operator. Just call or write for information.

HANDICAPPED HAMS

Volunteer examiners are permitted to utilize special provisions when administering examinations to handicapped applicants at the five WPM level. These accommodations may include pausing the telegraphy test after sentences, phrases, words or even individual letters. The examiners may require a physician's certification indicating the nature of the disability before determining which, if any, special procedures must be used.

Even if you are sightless, have no hearing or do not have use or control of your limbs, there is a way to transmit and receive ham radio communications. If you have a handicap of some sort, don't be reluctant to contact the Courage-Handi Ham System in Minnesota. For more information on this organization, write Courage Center, 3915 Golden Valley Rd., Golden Valley, MN 55422 or call (612) 588-0811.

OTHER RESOURCES

The premier national group representing radio Amateurs is The American Radio Relay League. Every Amateur should belong to this organization. Their address is: American Radio Relay League, 225 Main Street, Newington, Ct. 06111 telephone (203) 666-1541. Membership is currently $30.00/year for U.S. residents and with it, you receive an automatic subscription to their monthly publication, *QST*. The League has an extraordinary array of literature of interest to newcomers. Their book, "How to Tune in the World" is excellent. They also produce a Novice Course which is available at most Amateur Radio Stores.

The National Amateur Radio Association is a special interest group. This nonsprofit organization was formed to (a) publicize Amateur Radio to the general public, (b) bring young people into the hobby, (c) teach existing Amateurs how to be better Amateurs and (d) protect Amateur frequency allocations.

NARA can be reached in a number of ways:

National Amateur Radio Association
16541 Redmond Way, Suite 232
Redmond, WA 98052
Inquiries 1-800-GOT-2-HAM
Business Phone (206) 232-2579
MCI ID: NARANET1
CompuServe: 70371,111

A membership in NARA is $10.00 per year which provides a monthly journal called *The Amateur Radio Communicator*. Members also receive a certificate and periodic information mailings. Donations are accepted and encouraged.

Another special interest group is TAPR. If you are keen on computer communications via ham radio, you should contact: Tucson Amateur Packet Radio, P.O. Box 12925, Tucson, AZ 85732, telephone (602) 323-1710. They are the group which promoted and popularized packet radio communications via ham radio.

Last, but by no means least, is AMSAT which stands for the Amateur Satellite Corporation. This amazing group has parlayed memberships, donations and contributed labor into more than 20 communication satellites which have orbited the earth exclusively for Amateur use. If you would like to learn how you can transmit all over the world via satellite, these "orbital mechanics" can be contacted at: AMSAT, 850 Silgo Avenue, Silver Spring, MD 20910, telephone (301) 589-6062.

An excellent study device for Morse Code is the program called Super Morse. This program, written for MS DOS computers, is available from NARA. It comes on a 5.25 inch disk and the price is only $3.00 to cover postage and handling. Super Morse is shareware (you owe the author a contribution if you use it).

Magazines are an excellent source of information no matter what field you are interested in. You can sometimes pick up copies of Amateur magazines on newsstands.

QST magazine has something of interest for every ham with special emphasis on ARRL activities. Their address is ARRL, *QST* Magazine, 225 Main Street, Newington, CT. 06111.

CQ magazine's emphasis is on DXing, contesting and awards. They can be reached at *CQ* Magazine, 76 North Broadway, Hicksville, NY 11801.

73 magazine is famed for its rich editorials by Wayne Green and for its emphasis on construction and articles for beginners. Write them at *73* Magazine, WGE Center, Hancock, NH 03449.

For those interested in Amateur television transmissions, there are two excellent publications on the subject. One is *Amateur Television Quarterly*, 540 Oakton St., Des Plaines, IL 60018-1950. Drop a line to Henry Ruh, KB9FO, if you would like a sample copy.

USATVS Journal is published by Mike Donovan, KA0JAW. Mike has been reporting on ham TV for 22 years. They can be reached at USATVS, 1520 Cerro Dr., Dubuque, IA 52001.

An excellent publication for "homebrew artists" is called *Nuts & Volts Magazine*. If you like to build things, or are interested in electronic parts and used equipment, you'll find what you are looking for between the covers of this publication. *N&V* covers not only ham things but television, test equipment and computer goodies. You can reach them by writing T & L Publications, Inc., P.O. Box 1111, Placentia, CA 92670. Tell them NARA sent you and watch for a simple copy in the mail.

If you would like to learn more about attaching your computer to an Amateur station, you will enjoy reading *Digital Digest*. It is the premier publication for the one's and zero's crowd and is only $16.00 per year. *Digital Digest* is published bi-monthly by Arvo & Assoc., 4063 Goldenrod Rd., Winter Park, FL 32792.

There are advertisements for a number of Amateur radio companies in these magazines. A letter to the advertiser requesting information will bring a quick response.

These magazines provide an extraordinary amount of useful technical information. However Amateur news is usually 60–90 days after the fact due to publishing deadlines. For the best up-to-date information on what's happening in the ham radio world, you should subscribe to the popular newsletters.

The most famous is The *W5YI Report*. This 10-page document is published by Fred Maia (W5YI) every two weeks and contains news which is never more than a few days old. The *W5YI Report* costs $23.00 per year and can be obtained by writing: The *W5YI Report*, P.O. Box 565101, Dallas, TX 75356-5101. The telephone number is (817) 461-6443.

The oldest newsletter is *The Westlink Report*. It is published 26 times per year. It covers general Amateur radio news, FCC actions, new equipment releases, industry news, DX reports and propagation forecasts. The price is $24.50 per year. It's available from: *Westlink Report*, 28221 Stanley Ct., Canyon Country, CA 91351, telephone 1-(800) HAM-7303 or (805) 251-5558 in California.

There's a free service that provides the latest information on ham radio each week. It is the Amateur Radio Newsline, produced by Bill Pasternak (WA6ITF) and is heard weekly on repeaters all over the country. Check with your local repeater operator for the time "Newsline" can be heard.

LET'S DO IT!

There's no shortage of information and there are no secrets. Come on and join us in this world of dits and dah's and ones and zeros. I can personally guarantee that your life will never again be the same. At the very least, you'll make new friends and have new experiences. Isn't that worth a few hours of your time?

73 de Don Stoner, W6TNS
President
National Amateur Radio Association

The preceeding article, "Amateur Radio—King of Hobbies," is a reasonably accurate, non-controversial overview of ham radio and what it takes to obtain a Technician License.

Clubs, educational groups or anyone wishing to further the Amateur Radio fraternity are granted permission to reproduce the material. The reproduction must include the complete article and include the end tag "Reproduced with permission of The National Amateur Radio Association."

Reprints are available at cost. The price is $25.00 per hundred, postage paid.

Teaching the Ham Class

Gordon West, WB6NOA

We need more active Amateur Radio instructors. With the no-code license now available, the demand for the evening, weekend and weekday Radio class is at an all-time high.

If you enjoy telling newcomers about the excitement of Amateur Radio and if you're a good salesman or saleswoman, then you are probably born an excellent Amateur Radio instructor. And no, an Amateur Radio instructor doesn't need to be an electronics engineer, or an old salt who could copy code at 40 words-per-minute. I've known many an excellent instructor with only a basic knowledge of theory and a very shaky fist at CW, who made ham radio fun to learn about. Your enthusiasm will carry you and your students completely through your licensing course.

START WITH NOVICE

The Novice license is a snap to teach. You can do it on your own, or you can team up with another ham who enjoys Morse code. Together you can easily teach a Novice class in eight weeks.

Base your teaching on the FCC syllabus of Amateur Radio questions found in the Element 2 and 3(A) question pool. The pool totals almost 700 questions laid out logically, starting with Rules and Regulations and ending with Antennas and Feedlines. There are nine subject areas in the FCC question pool which you will be teaching. They are:

- Commission Rules
- Operating Procedures
- Radiowave Propagation
- Amateur Radio Practices
- Electrical Principles
- Circuit Components
- Practical Circuits
- Signals and Emissions
- Antennas and Feedlines

It's best to teach directly out of the textbook you and your students are using. As an Amateur Radio instructor, you can buy your textbooks direct from the following publishers at a discount:

Ameco Minneola, NY
(516) 741-5030

American Radio Relay League
Newington, CT
(203) 666-1541

Radio School Callbook
Lakebluff, IL
(708) 234-6600

W5YI Dallas, TX
(817) 461-6443

Ameco, Radio School and W5YI Novice materials all follow the FCC syllabus, beginning with Rules and Regulations. The question is listed, four possible answer, the correct answer, plus a brief description on why that answer is correct. This is a good way to teach a class to keep you at a moderate pace and always on course.

The American Radio Relay League's *Tune in the World with Ham Radio* is also an excellent publication and it starts out with basic electricity. An instructors notebook is also available. This will help you stay on course and at the right speed to teach the materials over an eight-week period.

Morse code should be sent to your students at a character rate of 15 words-per-minute, spaced to a five word-per-minute rate. This way, the student is not having to learn a new sound when upgrading to General. Code tapes recorded at this rate are available from the four organizations listed earlier.

It's also a good idea to have students actually practice sending the code, too. The sole source of plastic and brass code keys is from Ameco in Minneola, New York. Instructor quantity discounts are available. Inexpensive code oscillators are available from Radio School- Callbook, as well as from W5YI. Nye Viking telegraph keys are available from Ham Radio Outlet (1-800-854-6046). Carole Perry (P.O. Box 131646, Staten Island, NY 10313-0006) also has a code oscillator built into a ring box!

You may wish to have your students study their code and theory from computer disks. Amateur Radio computer programs area available from the following organizations:

The American Radio Relay League
Newington, CT

Diamond Systems, Niles, IL
(312-763-1722)

The Lanz Company, Louisville, KY
(502-895-1377)

Morse Tutor, GGTE
21881 Summer Circle
Huntington Beach, CA 92646
(no phone)

MFJ
Mississippi State, Mississippi
(601-323-5869)

National Amateur Radio Assoc.,
Redmond, WA
(206-232-2579)

QSO Tutor
Kennett Square, PA
(205-347-2109)

Renaissance Software
Killen, AL
(1-800-525-7235)

The program available from NARA is called "Super Morse" and is shareware. It costs $3.00 for shipping and handling.

The American Radio Relay League also offers a bimonthly newsletter for instructors. You should contact Rosalia White at the ARRL for more information.

If there is a ham class already going on in your local area, drop in and introduce yourself to the instructor. Instructors of ham radio classes are always eager to have assistants work with them, and ultimately begin offering other classes in the nearby community. Instructors are actively looking for more instructor—so find a class near you and plan to sit in.

You biggest job in teaching an Amateur radio class is to keep the eight weeks of ham radio learning **fun and exciting.** The hardest part of teaching the class is not the theory—and it's not the code. The hardest part of teaching the class is keeping your students interested in seeing their Amateur Radio instruction thorough and obtaining the Amateur Radio Novice license. This is why, in the last session, you must also bring in two outside General class or above examiners to give them the Novice test. Bring the examiners to the class—don't send the class out to try to find a local VE testing team. Find two Generals that will come in, take a personal interest in each student. They will work them through the code and theory examinations for an ultimate pass certificate and signed off and completed Form 610.

In upcoming issues we'll learn about some exciting demonstrations that will spice up your evening or weekend class sessions. We'll feature everything from popping capacitors to zapping a pickle to lighting up a florescent tube. These are demos and gags that make a ham class exciting and keep your students coming back for more.

In upcoming columns, we'll also talk about the techniques of teaching an exciting Amateur Radio code course. We'll talk about on-the-air code practice and how you can get your students to tune in to CW signals that are out there every day, just waiting for someone to use them for practice!

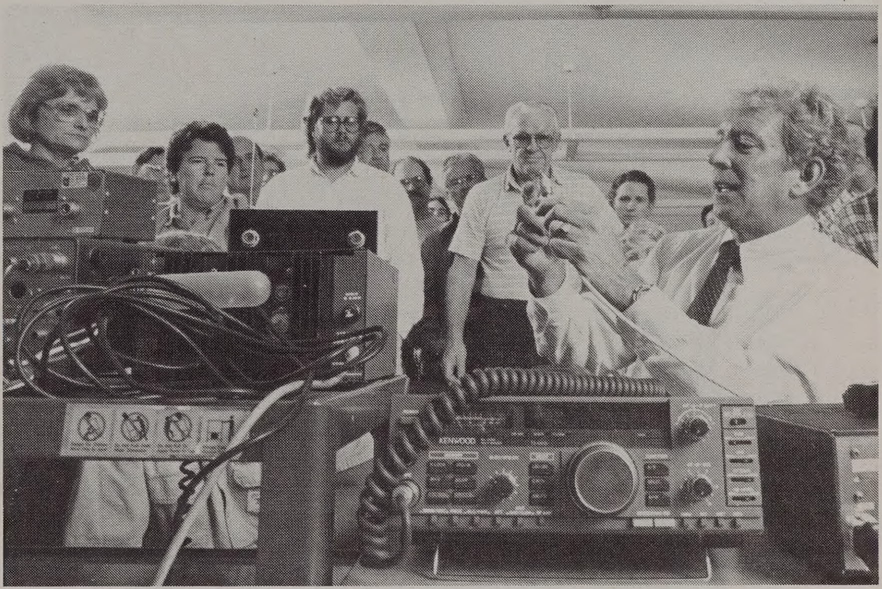
Above all, we'll show you how you can become an active instructor and have fun bringing newcomers into our hobby. And you don't have to do this for free, either. You can earn some loose change from training materials that you buy up to 50 percent off the cover price. It's also appropriate to charge a reasonable fee for students taking your class. There's absolutely nothing wrong with making a few hundred dollars for teaching an eight-week ham class.

In fact, you could earn well over $2,000 just putting together a ham radio course that I would come in and teach personally, with you, in your particular community. That's right—organize a ham class and make a $1,000 if we can bring in up to 50 students for the Gordon West weekend Amateur Radio course. Write me, c/o The National Amateur Radio Association, for more details.

So that's it for this issue. Do join the ARRL instructor's cadre and do call up the distributors of Amateur Radio training materials. Get set up to bring in those textbooks, disks and code keys and oscillators at a discount. Above all, get real excited about the possibilities of making your hobby really count when it comes to bringing in more newcomers.

73 de WB6NOA

Fort, AA6LM, photo



Equipment demonstrations are a must to keep student's high.

Martha Lostrom, KA1UUO, photo

"Pass" ribbons are a big hit with students.

Don't Miss An Issue!

NARA has an ambitious program to introduce people to Amateur Radio—The King of Hobbies.

We *MUST* get ham radio "going and growing" if our service and the frequencies we are allocated are to be preserved. But, it's not going to be inexpensive!

Thinking about becoming a ham? Even if you are not yet licensed, you should be a member of this fast growning, prestigous organization.

Your financial support will allow NARA to produce *The Amateur Radio Communicator* each month. Did you notice there are no advertisements in this issue? There won't be any next month either, for that matter. Not accepting advertising allows us incredible freedom to tell you the truth. If there is something wrong with a piece of ham gear, *The Amateur Radio Communicator* will tell you so. And we don't have to worry about the manufacturer getting upset and cancelling advertising. The *Amateur Radio Communicator* will feature comparative product reports. For example, we'll line up a group of hand held transceivers and compare them. We'll tell you what's good about them and what's bad. It is absolutely essential that you believe what you read in *The Amateur Radio Communicator.*

With no advertising revenue, our only support will come from your memberships and donations. You alone will determine the future of our organization and how effective we are in promoting our hobby.

Memberships will pay for a Washington presence. If we are to have a positive influence on The Federal Communications Commission, NARA must be represented by a communications attorney. As in most other things, you get what you pay for and experienced counsel is not inexpensive.

The educational programs of The National Amateur Radio Association must be expanded. We intend to exhibit our product (Amateur Radio) at educational conferences such as those held by the National Science Teachers Association. Your membership will help us accomplish this. We intend to see that teachers are rewarded for introducing students to Amateur Radio. Your membership will help us accomplish this.

One of the most important things we intend to do for our members is teach them how to acquire and wield power. Few people realize the awesome power for change that they hold in their fingertips. NARA intends to show you how to unleash this power and use it as a positive force for the betterment of our fraternity.

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- ☐ Two years (with 24 issues) for $18.00
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